LIFECYCLE INVESTING: DOES IT MAKE SENSE TO REDUCE RISK AS RETIREMENT APPROACHES?

John Livanas
UNSW School of Actuarial Sciences
C.E.O. AMIST Super

Agenda

• Reviewing Lifecycle Investing
• Monte Carlo Simulation – Calibration
• Results
• Summary and Policy Implications

Defining Lifecycle Investing

• Gradual reduction in the investment risk assumed by investors as they approach retirement

Marketing or Science

• For investors seeking to retire in 2045,
**Trends Internationally**

- Canada – C$1bn;
- Europe – Age based; high equities and then step changes
- USA – Target Date based; Smooth ‘Glide Path’
- Australia – limited as Superannuation is only one asset for retirement

**Key Questions**

- Individual Risk Profile at any one point versus over the individuals lifetime
- Considering other Assets; Income as an Asset
- May well derive some form of target risk changes over age
  - Zvi Bodie “Everyone Should Know About Life-Cycle Saving and Investing”
  - Samuelson “Lifetime Portfolio Selection by Dynamic Stochastic Programming”
  - Campbell and Viceira: “Strategic Asset Allocation: Portfolio Choice for Long-Term Investors”
- But in managing a DC fund, need to manage pooled assets for a range of investors with varying times-to-retire.

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**Monte Carlo Simulation**

**Working**

- Contributions 2007 AWOTE x 9%
- Investment Returns: 7%
- INFLATION = 3%
- Risk Free = 5.5%
- AGE AT DEATH

**Retired**

- BEQUEST = $0
- ‘PENSION’ = $41k p.a. for Bequest = $0 at σ = 0

**Monte Carlo Simulation**

**Working**

- 120 ‘Investors’ experiencing σ = 5.2%
- `(Age at Death)`

**Retired**

- `(Age at Death)`
Monte Carlo Iteration chosen

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<thead>
<tr>
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<th>Baseline</th>
<th>Iteration</th>
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<tbody>
<tr>
<td>1. Age at Retirement:</td>
<td>65</td>
<td>65</td>
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<td>2. Achieving the fund mean return of:</td>
<td>7.00%</td>
<td>7.02%</td>
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<td>3. Expected Bequest, (Terminal Value at Death):</td>
<td>$0</td>
<td>$0</td>
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<td>4. Expected Age at death of:</td>
<td>83</td>
<td>83</td>
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<td>5. No capacity to rely on age pension or additional income</td>
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<td>6. Actual Terminal value at age 83 (in today’s $)</td>
<td>$509,986</td>
<td>$509,986</td>
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<td>7. Annualised Standard Deviation (StDev) of:</td>
<td>5.20%</td>
<td>5.19%</td>
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<td>8. Day 0 required consumption to achieve $0 bequest motive</td>
<td>-$41,139</td>
<td>-$41,139</td>
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<td>9. Age at which money runs out:</td>
<td>83</td>
<td>83.2</td>
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Principle 1: Survivor Bias means that the Fund benefits from those individuals that leave fund early.

Figure 1: Incidence of Unintended Request: 1 by Scenario

Principle 2: Percentage of total wealth contributed at each age varies, peaks around the time of retirement.

Figure 2: Percentage of total wealth contributed at each age

Principle 3: Risk as a proportion of total accumulated wealth varies even though lifetime risk stays constant.

Figure 3: Risk at time (t) and (1st Dec) as a percentage of Total Investment Returns
Principle 4: Risk as a proportion of investment return at each period varies.

Summary

• Unintended bequests creating a survivorship benefit
• The percentage of total wealth contributed through investment returns concentrated about the point of retirement
• The single period risk taken on by individual varying as a proportion of total wealth contributed
• The single period risk varying inversely to percentage of total wealth contributed.